# 6680/12AU7-A

## MEDIUM-MU TWIN TRIODE

9-PIN MINIATURE TYPE

*For use in mobile communications equipment*

### GENERAL DATA

**Electrical:**

Heater, for Unipotential Cathodes:

| Heater arrangement | *Series* | *Parallel* | |
|---|---|---|---|
| Voltage | 12.6 ± 20%* | 6.3 ± 20%* | ac or dc volts |
| Current: | | | |
| At 12.6 volts | 0.15 | – | amp |
| At 6.3 volts | – | 0.3 | amp |

Direct Interelectrode Capacitances (Approx.):

| | *Without External Shield* | *With External Shield*[o] | |
|---|---|---|---|
| Grid to plate (Each unit) | 1.5 | 1.5 | μμf |
| Grid to cathode and heater (Each unit) | 1.6 | 1.8 | μμf |
| Plate to cathode and heater: | | | |
| Unit No.1 | 0.4 | 2 | μμf |
| Unit No.2 | 0.32 | 2 | μμf |

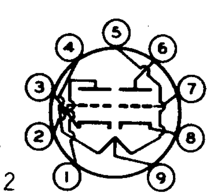
**Characteristics, Class $A_1$ Amplifier (Each Unit):**

| | | | |
|---|---|---|---|
| Heater Voltage: | | | |
| For series connection | 12.6 | 12.6 | volts |
| For parallel connection | 6.3 | 6.3 | volts |
| Plate Voltage | 100 | 250 | volts |
| Grid Voltage | 0 | –8.5 | volts |
| Amplification Factor | 20 | 17 | |
| Plate Resistance (Approx.) | 6500 | 7700 | ohms |
| Transconductance | 3100 | 2200 | μmhos |
| Plate Current | 11.8 | 10.5 | ma |
| Grid Voltage (Approx.) for plate μa = 10 | – | –24 | volts |

**Mechanical:**

| | |
|---|---|
| Operating Position | Any |
| Maximum Overall Length | 2-3/16" |
| Maximum Seated Length | 1-15/16" |
| Length, Base Seat to Bulb Top (Excluding tip) | 1-9/16" ± 3/32" |
| Diameter | 0.750" to 0.875" |
| Dimensional Outline | *See General Section* |
| Bulb | T6-1/2 |
| Base | Small-Button Noval 9-Pin (JEDEC No.E9-1) |
| Basing Designation for BOTTOM VIEW | 9A |

Pin 1 - Plate of Unit No.2
Pin 2 - Grid of Unit No.2
Pin 3 - Cathode of Unit No.2
Pins 4 & 9 - Heater of Unit No.2
Pins 5 & 9 - Heater of Unit No.1




Pin 6 - Plate of Unit No.1
Pin 7 - Grid of Unit No.1
Pin 8 - Cathode of Unit No.1
Pin 9 - Heater Mid-Tap



ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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### AMPLIFIER — Class $A_1$

*Values are for Each Unit*

**Maximum Ratings,** *Design-Maximum Values:*

| | | | |
|---|---|---|---|
| PLATE VOLTAGE | 330 | max. | volts |
| GRID VOLTAGE: | | | |
| Positive-bias value | 0 | max. | volts |
| PLATE DISSIPATION | 3 | max. | watts |
| PEAK HEATER-CATHODE VOLTAGE: | | | |
| Heater negative with respect to cathode | 200 | max. | volts |
| Heater positive with respect to cathode | 200▲ | max. | volts |

**Maximum Circuit Values:**

| | | | |
|---|---|---|---|
| Grid-Circuit Resistance: | | | |
| For fixed-bias operation | 0.25 | max. | megohm |
| For cathode-bias operation | 1 | max. | megohm |

* When the heater is operated from storage-battery-with-charger supply or similar supplies, the normal battery-voltage fluctuation may be as much as 35 per cent or more. Although such variation in heater voltage is permissible for short periods, reliability can be increased with improved supply-voltage regulation.

○ With external shield JEDEC No.315 connected to cathode of unit under test.

▲ The dc component must not exceed 100 volts.

### SPECIAL RATINGS & PERFORMANCE DATA

**Heater-Cycling Life Performance:**

This test is performed on a sample lot of tubes from each production run. A minimum of 2000 cycles of intermittent operation is applied under the following conditions: heater volts = 15 (Series connection) cycled one minute on and one minute off, heater 135 volts positive with respect to cathode, and all other elements connected to ground. At the end of this test, tubes are checked for heater-cathode shorts and open circuits.

**Transconductance at Reduced Heater Voltage:**

Average Value (Each unit) . . . . . . . . . 1750 μmhos

With heater volts = 10 (Series connection), plate volts = 250, and grid volts = -8.5.